

Work Order ID 90800

September-26-12 12:49:27 PM

90800

Page 1

Item ID: 646.9711

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Blade

Start Date: 26/09/2012 Start Qty: 20.00

20

Cust Item ID:

Required Date: 10/10/2012 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/09/26

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

646.9700

N/C

100

0.00

100

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 4.625"

110

0.00

110

HAAS CNC VERTICAL MACHINING #1

HAAS I

Memo

0.00

HAAS CNC vertical machine #1

1-Machine per folio FB135

DWG REV: N/C

FOLIO REV: AA

2- deburr and break all sharp edges except otherwise noted

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabelled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

Work Order ID 90800

September-26-12 12:49:27 PM

90800

Page 2

Item ID: 646.9711

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Item Name: Blade

Stop *NS2*

Start Date: 26/09/2012 Start Qty: 20.00

20

Cust Item ID:

Required Date: 10/10/2012 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120									
QC	Memo	0.00							
Quality Control									
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.00							
Quality Control									
140	Outsource process - Heat Treat	0.00							
140									
Outsource1	Memo	0.00							
Outsource process - Heat Treat	HEAT TREAT AS PER DWG, SEE NOTE #3								
	ISSUE P/O: 18035								

DAS
25
2-89

12-001

CY 12/10/02 (26)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

Work Order ID 90800

September-26-12 12:49:27 PM

90800

Page 3

Item ID: 646.9711

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Blade

Start Date: 26/09/2012 Start Qty: 20.00

20

Cust Item ID:

Required Date: 10/10/2012 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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150 Receive & Inspect for Damage & Mat'l Certs 0.00

150

Packaging Memo 0.00

Packaging

16/11/26 (26)

155 QC5- Inspect part completeness to step on W/O 0.00

155

QC Memo 0.00

Quality Control

DAS 15 2-89 10-26

26 con

160 Spray Painting per QSI005 4.2 0.00

160

SprayPaint Memo 0.00

Spray Painting

PRIME AS PER DWG, SEE NOTE #4

PRIMER BATCH: 122543

26 0 0 12-11-8

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input checked="" type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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90800

Page 4

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 26/09/2012 **Start Qty:** 20.00

20

Cust Item ID:

Required Date: 10/10/2012 **Req'd Qty:** 20.00

20

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

[illegible]

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Picklist Print

September-26-12 12:49:30 PM

Page 1

Work Order ID: 90800

90800

Parent Item: 646.9711

646.9711

Parent Item Name: Blade

Start Date: 26/09/2012

Required Date: 10/10/2012

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	10.5000	0.386	8.126316			

MSTFFI -A2-R0 500X1 250

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

**

Location

Loc Qty

Loc Code

MAT

10.5

123076

10.5

10.5 on 12/09/26

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

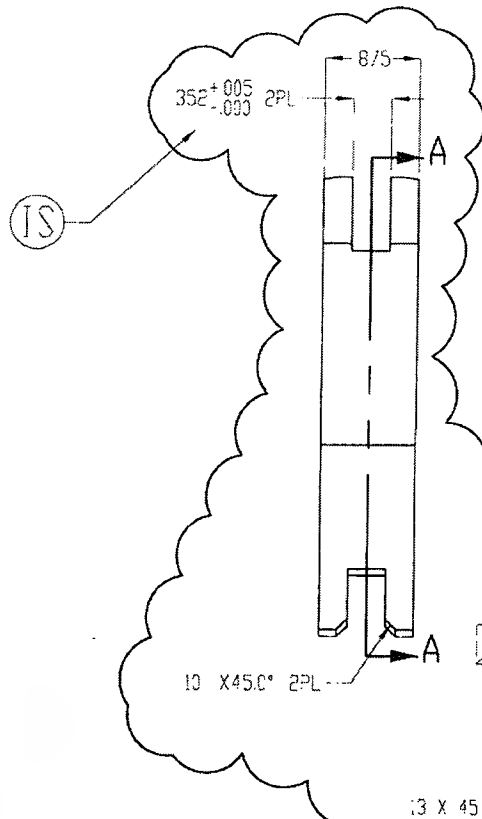
FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____ _____
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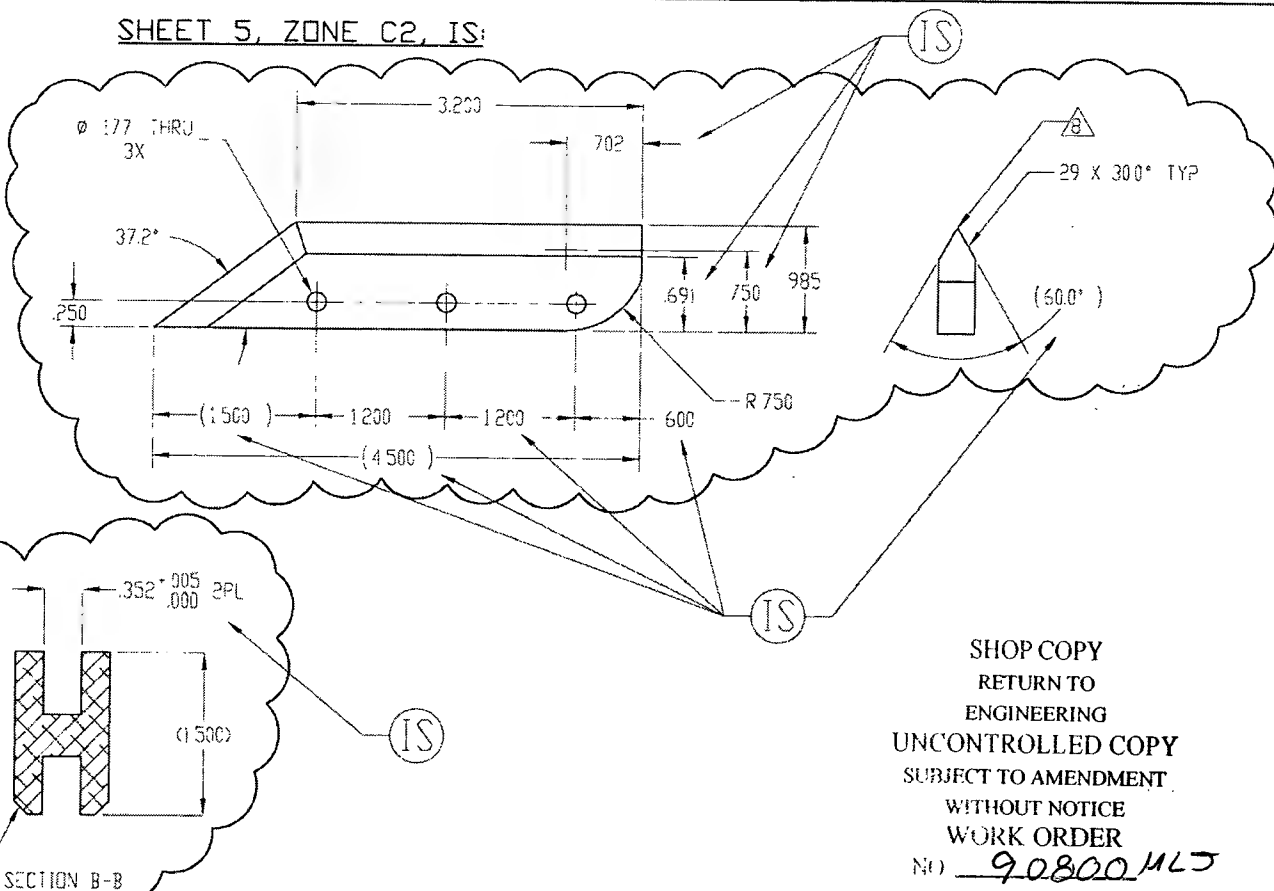
APICAL
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 02744		SHEET 1 OF 1	
DWG NO. 646.9700	REV/N/C	PREPARED BY S.HUFF	DATE: 01/07/10
DWG TITLE: CUTTER SUB ASSY		EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER
REASON: REVISED SCREW LENGTH, CHANNEL WIDTHS & DIMENSIONING SCHEME SHEET 5.			

SHEET 2, ZONE C6, IS:



SHEET 5, ZONE C2, IS:

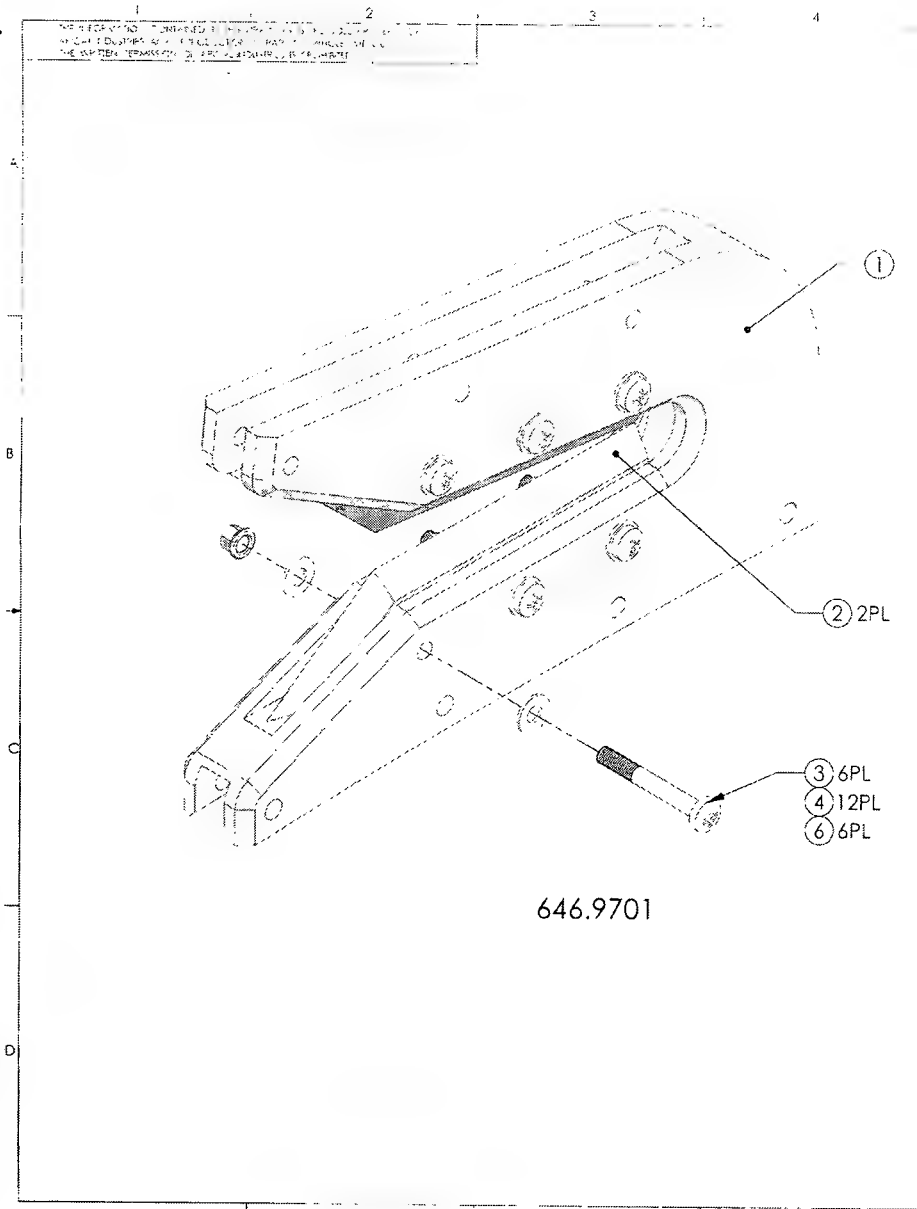


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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO 90800 MLJ
12-09-26

3	R	601.3157	12	SCREW	MS27039-0818
			.9701		
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:				CHANGE CATEGORY	DER REVIEW REQUIRED
<input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRUC <input checked="" type="checkbox"/> ICA <input type="checkbox"/> FMS <input checked="" type="checkbox"/> BOM				<input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

90800



NOTES:

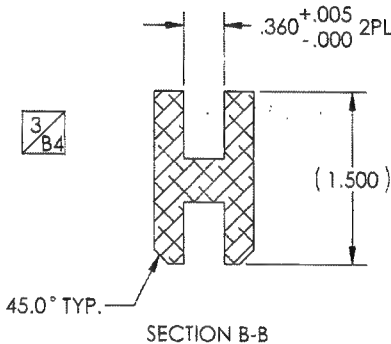
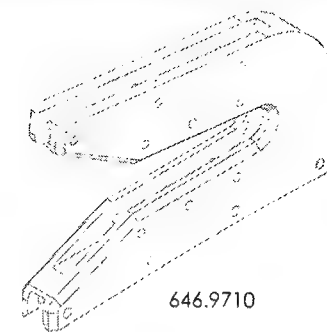
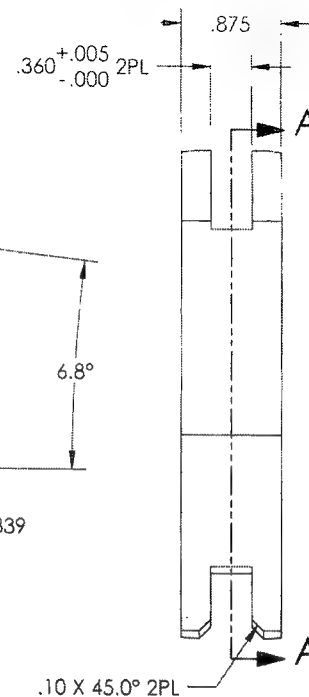
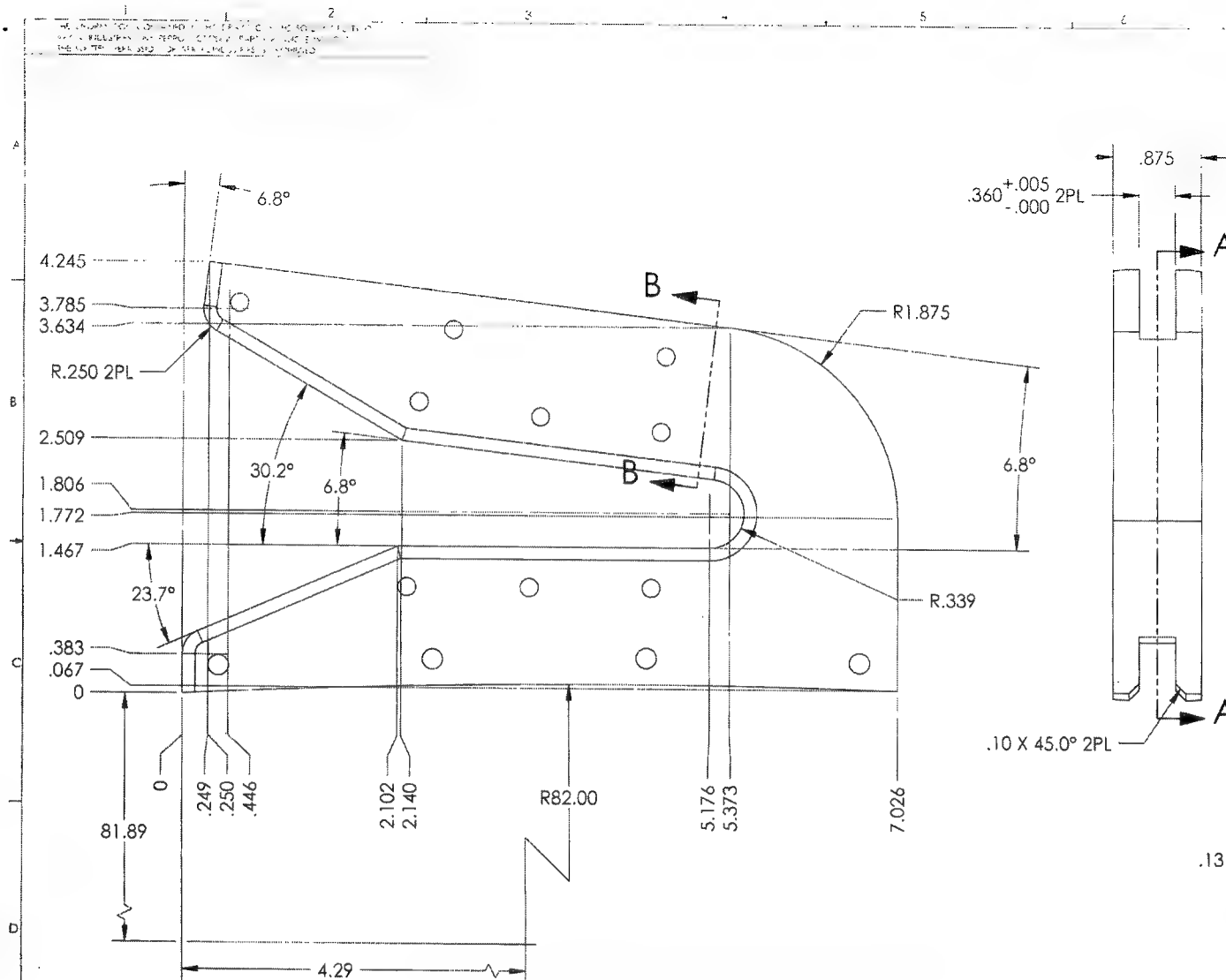
1. MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
2. FINISH: HARD ANODIZE IAW MIL-A 8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4960 50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377 J TYPE I CLASS N: 1-2 MIL MAX
3. MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
4. FINISH: PRIME IAW MIL-P-23377 J TYPE I CLASS N: 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP 120
7. APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
8. CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE

UNINCORPORATED ECN(S)

02744

QTY	FIG #	PART #	DESCRIPTION	MATERIAL	SPEC
6	6	601.1541	LOCKNUT	6051042105	
A/R	5	601.2045	RTV, LOCTITE 598		
12	4	601.2764	WASHER	114-111-1111111111	
6	3	601.2765	SCREW	114-111-1111111111	
2	2	646.9711	BLADE		
1	1	646.9710	BODY		
1	1	646.9701	CUTTER SUB ASSY		
QTY	FIG #	PART #	DESCRIPTION	MATERIAL	SPEC
NEXT ASSY (S)			PARTS LIST		
646.9600			APICAL INDUSTRIES		
			2608 TEMPLE HEIGHTS DR		
			OCEANSIDE, CA 92056-4512 (760) 724-5300		
			CUTTER SUB ASSY		
			646.9700		
			SCALE NONE		
			SHEET 1 OF 5		

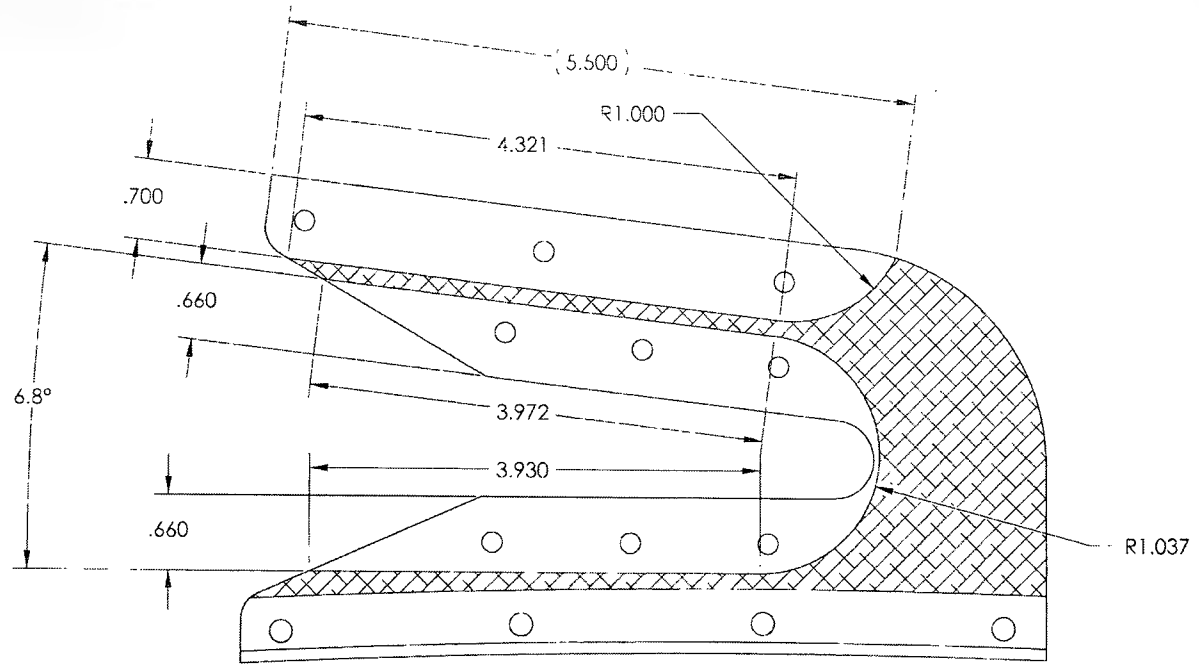
90800



ORIGINAL DATE: 02-28-90 DESIGNED BY: J. B. B. B. CHECKED BY: J. B. B. B. DRAWING APPROVAL: J. B. B. B. CONTRACT NO.:		APICAL INDUSTRIES* 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
*UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE TO .01 FRACTIONS ARE TO 1/16 ANGLES ARE TO 1°		CUTTER SUB ASSY PART NO. 646.9700 SCALE: NONE	
SHEET: 2 OF 3		REV: 01/20/96 DESIGNED BY: J. B. B. B. CHECKED BY: J. B. B. B. DRAWING APPROVAL: J. B. B. B. CONTRACT NO.:	

90800

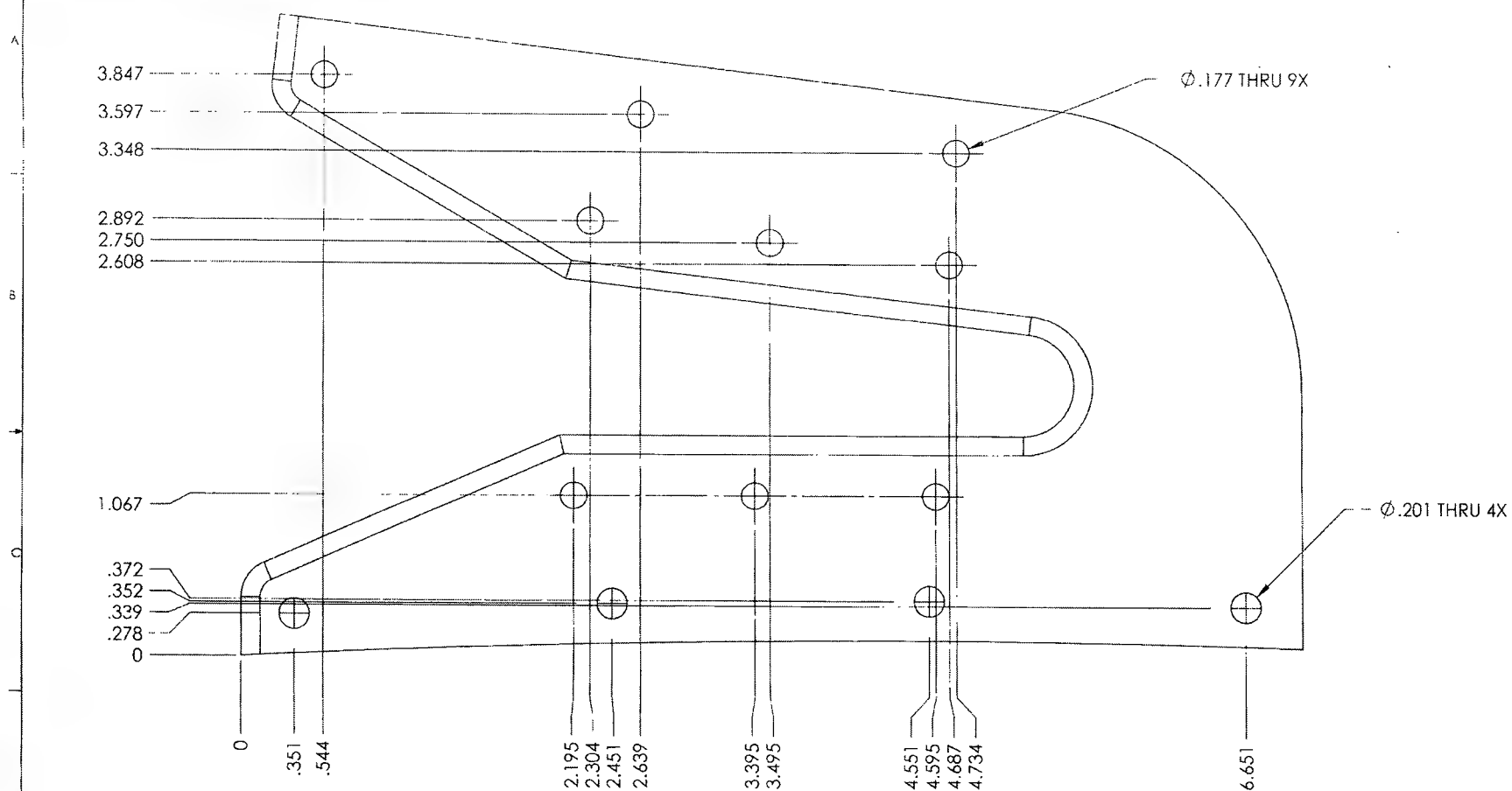
ALL DIMENSIONS CONTAINED IN THIS DRAWING ARE THE PROPERTY OF APICAL INDUSTRIES AND SHOULD NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.



SECTION A-A 2/28

ORIGINAL DATE MOD. DATE APP. NAME V. POLARNO DRAWING APPROVAL IN BRIDGE DATE	DATE 05/20/00 PROJECT 000000 000000	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE 1/16" OF INCHES 1/32" OF INCHES 1/64" OF INCHES	REV. DATE 6 07/02/00 SCALE: NONE	REV. NO. 646.9700 REV. NVC SHEET 3 OF 5

90800



HOLE LOCATIONS +/- .002

ORIGINAL DATE AMC (A) - P 05-09	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANS, CA. 92056-3512 (760) 724-5300
REVISIONS P 02-00 1 P 02-00 2 P 02-00 3 P 02-00 4 P 02-00 5 P 02-00 6 P 02-00 7 P 02-00 8 P 02-00 9 P 02-00 10 P 02-00 11 P 02-00 12 P 02-00 13 P 02-00 14 P 02-00 15 P 02-00 16 P 02-00 17 P 02-00 18 P 02-00 19 P 02-00 20 P 02-00 21 P 02-00 22 P 02-00 23 P 02-00 24 P 02-00 25 P 02-00 26 P 02-00 27 P 02-00 28 P 02-00 29 P 02-00 30 P 02-00 31 P 02-00 32 P 02-00 33 P 02-00 34 P 02-00 35 P 02-00 36 P 02-00 37 P 02-00 38 P 02-00 39 P 02-00 40 P 02-00 41 P 02-00 42 P 02-00 43 P 02-00 44 P 02-00 45 P 02-00 46 P 02-00 47 P 02-00 48 P 02-00 49 P 02-00 50 P 02-00 51 P 02-00 52 P 02-00 53 P 02-00 54 P 02-00 55 P 02-00 56 P 02-00 57 P 02-00 58 P 02-00 59 P 02-00 60 P 02-00 61 P 02-00 62 P 02-00 63 P 02-00 64 P 02-00 65 P 02-00 66 P 02-00 67 P 02-00 68 P 02-00 69 P 02-00 70 P 02-00 71 P 02-00 72 P 02-00 73 P 02-00 74 P 02-00 75 P 02-00 76 P 02-00 77 P 02-00 78 P 02-00 79 P 02-00 80 P 02-00 81 P 02-00 82 P 02-00 83 P 02-00 84 P 02-00 85 P 02-00 86 P 02-00 87 P 02-00 88 P 02-00 89 P 02-00 90 P 02-00 91 P 02-00 92 P 02-00 93 P 02-00 94 P 02-00 95 P 02-00 96 P 02-00 97 P 02-00 98 P 02-00 99 P 02-00 100	CUTTER SUB ASSY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 1. FINISHES: 1.0000, 2.0000, 3.0000, 4.0000, 5.0000, 6.0000, 7.0000, 8.0000, 9.0000, 10.0000, 11.0000, 12.0000, 13.0000, 14.0000, 15.0000, 16.0000, 17.0000, 18.0000, 19.0000, 20.0000, 21.0000, 22.0000, 23.0000, 24.0000, 25.0000, 26.0000, 27.0000, 28.0000, 29.0000, 30.0000, 31.0000, 32.0000, 33.0000, 34.0000, 35.0000, 36.0000, 37.0000, 38.0000, 39.0000, 40.0000, 41.0000, 42.0000, 43.0000, 44.0000, 45.0000, 46.0000, 47.0000, 48.0000, 49.0000, 50.0000, 51.0000, 52.0000, 53.0000, 54.0000, 55.0000, 56.0000, 57.0000, 58.0000, 59.0000, 60.0000, 61.0000, 62.0000, 63.0000, 64.0000, 65.0000, 66.0000, 67.0000, 68.0000, 69.0000, 70.0000, 71.0000, 72.0000, 73.0000, 74.0000, 75.0000, 76.0000, 77.0000, 78.0000, 79.0000, 80.0000, 81.0000, 82.0000, 83.0000, 84.0000, 85.0000, 86.0000, 87.0000, 88.0000, 89.0000, 90.0000, 91.0000, 92.0000, 93.0000, 94.0000, 95.0000, 96.0000, 97.0000, 98.0000, 99.0000, 100.0000, 101.0000, 102.0000, 103.0000, 104.0000, 105.0000, 106.0000, 107.0000, 108.0000, 109.0000, 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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 1. FINISHES: 1.0000, 2.0000, 3.0000, 4.0000, 5.0000, 6.0000, 7.0000, 8.0000, 9.0000, 10.0000, 11.0000, 12.0000, 13.0000, 14.0000, 15.0000, 16.0000, 17.0000, 18.0000, 19.0000, 20.0000, 21.0000, 22.0000, 23.0000, 24.0000, 25.0000, 26.0000, 27.0000, 28.0000, 29.0000, 30.0000, 31.0000, 32.0000, 33.0000, 34.0000, 35.0000, 36.0000, 37.0000, 38.0000, 39.0000, 40.0000, 41.0000, 42.0000, 43.0000, 44.0000, 45.0000, 46.0000, 47.0000, 48.0000, 49.0000, 50.0000, 51.0000, 52.0000, 53.0000, 54.0000, 55.0000, 56.0000, 57.0000, 58.0000, 59.0000, 60.0000, 61.0000, 62.0000, 63.0000, 64.0000, 65.0000, 66.0000, 67.0000, 68.0000, 69.0000, 70.0000, 71.0000, 72.0000, 73.0000, 74.0000, 75.0000, 76.0000, 77.0000, 78.0000, 79.0000, 80.0000, 81.0000, 82.0000, 83.0000, 84.0000, 85.0000, 86.0000, 87.0000, 88.0000, 89.0000, 90.0000, 91.0000, 92.0000, 93.0000, 94.0000, 95.0000, 96.0000, 97.0000, 98.0000, 99.0000, 100.0000, 101.0000, 102.0000, 103.0000, 104.0000, 105.0000, 106.0000, 107.0000, 108.0000, 109.0000, 110.0000, 111.0000, 112.0000, 113.0000, 114.0000, 115.0000, 116.0000, 117.0000, 118.0000, 119.0000, 120.0000, 121.0000, 122.0000, 123.0000, 124.0000, 125.0000, 126.0000, 127.0000, 128.0000, 129.0000, 130.0000, 131.0000, 132.0000, 133.0000, 134	

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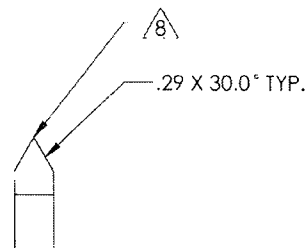
3.200

4.500

.500

.985

R.750



646.9711

QTY: 100 DATE: 10/1/00 DESIGNED BY: J. H. H. H. DRAWN BY: J. H. H. H. CHECKED BY: J. H. H. H. APPROVED BY: J. H. H. H. CONTRACT NO.:		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR OCEANSIDE, CA 92056-3512 (760) 724-5300	
TITLE: CUTTER SUB ASSY 100% COMPLETE 100% COMPLETE 100% COMPLETE 100% COMPLETE		SER: 07M26 SCALE: NONE	Dwg No: 646.9700 REV: N/C SHEET: 5 OF 5



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO18035**

Purchase Order Date 10/01/12

PO Print Date 10/02/12

Page Number 2 of 3

Order From :

VC-MET004

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	450 473 1884	Requisition Nbr	
Vendor Fax	450 491 5498	Tax Resale Nbr	10127-2607
Vendor Account Nbr		Terms	Net 30
		Currency	CAD
		FOB	Destination-Collect

Special Inst: HEAT TREAT TO 6061-T6

NOTE: PART ARE MADE FROM
MATERIAL 6061-0 SHEET.032

DETAIL C OF C REQUIRED

4	90589	D4456-3 AFT RAINGUTTER, LH	10/12/12	6.00	FedEx PI collect	\$26.2850	\$157.71
Yes							

Special Inst: HEAT TREAT TO 6061-T6

NOTE: PART ARE MADE FROM
MATERIAL 6061-0 SHEET.032

DETAIL C OF C REQUIRED

5	90587	D4456-4 AFT RAINGUTTER, RH	10/12/12	10.00	FedEx PI collect	\$26.2850	\$262.85
Yes							

Special Inst: HEAT TREAT TO 6061-T6

NOTE: PART ARE MADE FROM
MATERIAL 6061-0 SHEET.032

DETAIL C OF C REQUIRED

6	90800	646.9711 BLADE	10/12/12	26.00	FedEx PI collect	\$10.0000	\$260.00
Yes							

**CERTIFICATE OF CONFORMITY
REQ'D UPON DELIVERY**

No substitution or deviation without
consent.

Certificate of Conformity or Material
Certification required **YES** NO

Change Nbr: 2

Change Date: 10/02/12



Metcor Inc.

560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8
Tél. 450 473-1884
Télécopieur/Fax administration 450 491-5498
Télécopieur/Fax production 450 491-6454

Page 1 of 1

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
179759	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO18035		A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	5	60 - 62 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
26	7	848.9711 (26) BLADE MATERIAL: AISI A2 TOOL STEEL CONDITION ANNEALED HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS REFERENCE 90800 CONTENANT: 1 BOÎTE DE CARTON

COMMENTAIRES / comments

CERTIFIÉ par / Certified by:

[Signature]



DATE: 2012-10-05

9 Oct.

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de Livraison

Order	Shipper	Shipping Seq.
179759	1	64904

Shipped Complete

Customer **215**

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

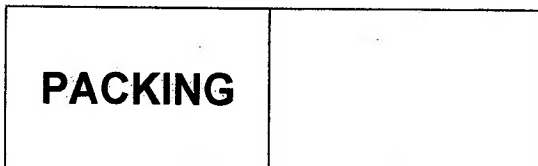
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
PO18035		A2	2012/10/2	PICK UP
Quantity	Part No. / Part Name / Part Description			Pounds

26 646.9711
(26) BLADE
MATERIAL: AISI A2 TOOL STEEL
CONDITION ANNEALED
HEAT TREAT TO 58-62 RC
ROCKWELL HARDNESS
REFERENCE 90800

CONTENANT: 1 BOÎTE DE CARTON

Container Type	# Of Containers	Container Comments
BOITE DE CARTON	1	



Quantity Shipped: 26
Pounds Shipped: 7,00
Quantity Remaining: 0
Pounds Remaining: 0,00

Quantity Shipped: 26

Pounds Shipped: 7,00

Signature:

Date:

Shipped ON: 2012/10/05